

REMARKS

I. Claim Objections

In the Office Action dated April 30, 2007, The Examiner asserted that the numbering of the claims as originally filed is in error. The Examiner indicated that claims number 14 and 15 are repeated. In response to these objections, the Applicant has amended the claims to renumber the mis-numbered claims 14-20 as 16-22 via the claim amendments provided herein. Based on the foregoing, the Applicant submits that the aforementioned objections have now been overcome. If such claim amendments and re-numbering are not consistent with the Examiner's re-numbering, the Applicant respectfully requests that the Examiner contact Applicant via telephone and an Examiner's amendment to number the claims accordingly.

II. Claim Rejections – 35 U.S.C. § 103

Requirements for Prima Facie Obviousness

The obligation of the examiner to go forward and produce reasoning and evidence in support of obviousness is clearly defined at M.P.E.P. §2142:

The examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. If the examiner does not produce a *prima facie* case, the applicant is under no obligation to submit evidence of nonobviousness.

M.P.E.P. §2143 sets out the three basic criteria that a patent examiner must satisfy to establish a *prima facie* case of obviousness:

1. some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings;
2. a reasonable expectation of success; and
3. the teaching or suggestion of all the claim limitations by the prior art reference (or references when combined).

It follows that in the absence of such a *prima facie* showing of obviousness by the Examiner (assuming there are no objections or other

grounds for rejection), an applicant is entitled to grant of a patent. *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443 (Fed. Cir. 1992). Thus, in order to support an obviousness rejection, the Examiner is obliged to produce evidence compelling a conclusion that each of the three aforementioned basic criteria has been met.

Mahy in view of Ito and Holub

Claims 1-8 and 10-22 were rejected under 35 U.S.C. §103(a) as being unpatentable over Mahy (U.S. Patent No. 5,832,109) in view of Ito et al. (U.S. Patent No. 6,437,792), hereinafter referred to as "Ito", and further in view of Holub (U.S. Patent No. 6,750,992).

Regarding claim 10, the Examiner argued that Mahy discloses a method for calculating color gamut by teaching a system comprising, a processing device, under the control of a particular dimensional order (citing col. 8, lines 24-45; col. 12, lines 19-23; and col. 13, lines 46-55 of Mahy), a color sensor (citing col. 3, lines 62-67 and col. 4, lines 1-14 of Mahy) for dynamically determining which color values among said plurality of color values have attained a gamut limit (citing col. 12, lines 19-23 of Mahy) and a transformation module for automatically reducing said particular dimensional order based on determining which color value has attained said gamut limit, thereby providing improved controls for colors that are located external to said gamut (citing col. 12, lines 24-33 of Mahy).

The Applicant notes initially that the Examiner argued the processing device, as taught by Mahy, included automatically providing the plurality of colors as input. However, The Examiner then claimed that Ito rather than Mahy teaches a plurality of color values automatically provided as input (citing Figure 1, col. 1, lines 60-67, and col. 2, lines 1-9 of Ito). Assuming that the Examiner did not intend to assert Mahy teaches a plurality of color values automatically provided as input, the Examiner argued that it would have been obvious to one skilled in the art to modify Mahy to include automatically provided input as taught by Ito to improve color reproducibility (citing col. 6, lines 31-34 of Ito).

The Applicant respectfully disagrees with the Examiner's assessment. Specifically, the Applicant argues the third prong of the aforementioned prima facie obviousness, requiring that all the claim limitations be taught or suggested by the prior art, has not been met.

The Examiner argued that col. 12 lines 19-23, in conjunction with col. 3 lines 62-67 and col. 4 lines 1-14 of Mahy teaches utilization of a color sensor to determine which color value among a plurality of color values has attained a gamut limit. Nowhere in the cited language of Mahy is there a suggestion to use a color sensor, only a passing reference to "deviations that can occur between the predicted and measured color". The Applicant appreciates that this reference would require some color measurement, but this simply cannot be construed to teach or suggest use of a color sensor, as conceived in claim 10, for determining which of a plurality of colors has attained a gamut limit. The determination of a group of colors and the attainment of a gamut limit are not taught, suggested or disclosed by Mahy, alone or in combination with Ito and/or Holub.

Col. 12 lines 19-23 of Mahy simply constitutes a statement of the fact that a mathematical space of n dimension's can be defined by its boundaries and that said boundaries have a dimension $n-1$. This surely does not teach, as the Examiner suggests, using a color sensor to determine colors at or beyond a gamut limit. The language cited by the examiner is, in essence, a discussion of the applicability of the Neugebauer equations based on discrepancies in measured and expected color, combined with a scholarly lecture on the geometric properties of mathematical spaces, followed by a conclusion that this language teaches or suggests use of a color sensor to determine colors that have reached a gamut limit, but without specifically identifying, how, where and why the language of Mahy teaches using a color sensor to determine colors at or beyond a gamut limit.

The Applicant respectfully disagrees with the Examiner's argument that col. 1 lines 60-67 and col. 2 lines 1-9 of Ito teaches automatic input of a plurality of colors. The cited language specifically refers to "a color signal from an input device...". Where in this language is automatic input taught?

The Applicant submits rather, col. 1 lines 60-67 and col. 2 lines 1-9 of Ito are describing broadly any input since the input from a scanner (as mentioned by Ito), for example, is not necessarily automatic. Thus, the third prong of prima facie obviousness requiring that all the limitations of the claim be within the teaching or suggestion of the cited references has not been met.

It follows, in light of the aforementioned argument that the prima facie obviousness requirements via the combination of Mahy and Ito, are lacking. The applicant asserts the cited language of Ito (col. 1, lines 60-67 and col.2, lines 1-9) refers to input generally. Thus, there is no motivation for one skilled in the art to modify Mahy to include Ito as asserted by the Examiner.

With respect to the first prong of the aforementioned Prima Facie Obviousness test, the Applicant reminds the Examiner that the language of the references may not be taken out of context and combined then without motivation, in effect producing the words of the claims (and sometimes, not even the words or concepts of the claims), without their meaning or context. The resultant combination of references would not yield the invention as claimed. The claims are rejected under 35 U.S.C. §103(a) but no showing has been made to provide clear support as to why one of skill in the art would be motivated to make such a combination, and further fails to provide the teachings necessary to fill the gaps in these references in order to yield the invention as claimed. The rejections under 35 U.S.C. §103(a) have provided no more than to simply point out the individual words of the Applicant's claims among the references, but without the reason and result as provided in the Applicant's claims and specification, and without reason as to why and how the references could provide the Applicant's invention as claimed. Hindsight cannot be the basis for motivation, and is not sufficient to meet the burden of sustaining a 35 U.S.C. §103(a) rejection.

Thus, claim 10 of the present invention is not taught or suggested by Mahy and/or Ito. Combining these references fails to teach or yield the invention as claimed. The combination of these references fails to teach or suggest all the elements of the claim. Further, one of skill in the art would

not be motivated to make such a combination. Therefore, the present invention is not obvious in light of any combination of Mahy and/or Ito.

The Applicant notes the Examiner's finding that claim 1 has been rejected for the same reason discussed in the rejection of claim 10. The Applicant further notes if an independent claim is not obvious any claim dependent on that claim is also not obvious. *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988). Therefore, claims 11-22, based on independent claim 10, and claims 2-8 based on independent claim 1, must also be found not obvious.

The Applicant therefore respectfully requests, in light of the above arguments, that the rejection of claims 1 and 10, and in light of *In re Fine* claims 11-22 and 2-8, based on 35 U.S.C. § 103(a), be withdrawn.

With regard to claim 11, the Examiner argues Mahy teaches a transformation module for transforming a particular dimensional order in response to dynamically determining which color value among said plurality of color values has attained gamut limit (citing col. 12, lines 19-32 of Mahy).

The applicant respectfully disagrees with the examiners assessment. Initially, the Applicant refers the Examiner to the argument above regarding non-obvious dependent claims (*In re Fine*). Also, while the cited language does teach transforming said particular dimensional order, claim 11 has an element not taught or suggested by Mahy. First, the transformation described in Mahy is used to determine contours that ultimately are used to define the color gamut. By contrast, the transformation in claim 11 is in response to the dynamic determination of which of a specific plurality of colors has attained a gamut limit. Thus, Mahy and claim 11 share a similar means to a different end. The only element the cited language of Mahy and claim 11 actually share is the use of a transformation module, a mathematical ubiquity. Therefore, the Applicant argues all the limitations of claim 11 are not taught or suggested by Mahy and that claim 11 is therefore not obvious.

The Applicant notes the Examiner's finding that claim 2 has been rejected for the same reason discussed in the rejection of claim 10. The

Applicant respectfully requests, in light of the above argument, that the rejection of claims 11 and 2 based, on 35 U.S.C. § 103(a), be withdrawn.

With regard to claim 12 the Examiner argues Mahy teaches that said particular order comprises a three-dimensional order (citing Fig. 2 and col. 6, lines 36-39 of Mahy).

The Applicant respectfully disagrees with this assessment. Initially the Applicant refers the Examiner to the argument above regarding non-obvious dependent claims (*In re Fine*). The Applicant further argues col. 6 lines 36-39 of Mahy teaches or suggests the object of the invention is representing color gamut boundaries in 3-diminsional color space. Claim 12 however is limiting claim 10 by describing the condition of the space to be reduced. In other words, the language in Mahy col. 6 lines 36-39 does not teach the limitation of claim 12 because the use of 3-diminsional color space as conceived by claim 12 is a means rather than an end. Therefore, the Examiner has not met the prima facie requirement that all limitations of the claim be taught or suggested by the reference.

The Applicant notes the Examiner's finding that claim 3 has been rejected for the same reason discussed in the rejection of claim 12. The Applicant respectfully requests, in light of the above argument, that the rejection of the claims 12 and 3, based on 35 U.S.C. §103(a), be withdrawn.

With regard to claim 13, the Examiner argues Mahy teaches that said transformation module further comprises a transformation module for reducing said three-dimensional order to a two-dimensional order (citing col. 12, lines 19-23 of Mahy).

The Applicant respectfully disagrees with this assessment. Initially the Applicant refers the Examiner to the argument above regarding non-obvious dependent claims (*In re Fine*). Further, the Applicant asserts the cited passage lacks any reference to a "transformation module" or description of any method or system. In fact, the cited passage lacks any insight into the art taught by Mahy. It is instead a simple description of a mathematical fact. This cannot be construed to teach or suggest a "transformation module", which is defined by Mahy as a mathematical function that expresses color

value (col. 1, lines 44-50 of Mahy). Being that there is no discussion in col. 12, lines 19-23 of Mahy, of any manifestation of a transformation module, or said module operating to reduce a three-dimensional order to a two-dimensional order, the Applicant asserts Mahy does not teach or suggest the limitations of claim 13 necessary to establish prima facie obviousness.

The Applicant notes the Examiner's finding that claim 4 has been rejected for the same reason discussed in the rejection of claim 13. The Applicant respectfully requests, in light of the above argument, that the rejection of the claims 13 and 4, based on 35 U.S.C. §103(a), be withdrawn.

With regard to claim 14, the Examiner argues Mahy teaches that said transformation module reduces said three-dimensional order to said two-dimensional order in response to determining which colors among said plurality of colors have attained said gamut limit (citing col. 12, lines 19-32 of Mahy).

The Applicant respectfully disagrees with this assessment. Initially the Applicant refers the Examiner to the argument above regarding non-obvious dependent claims (*In re Fine*). The Applicant further argues the transformation described in Mahy is used to determine contours that ultimately are used to define the color gamut. By contrast, the reduction in claim 14 is in response to the dynamic determination of which of a specific plurality of colors has attained a gamut limit. Thus, Mahy and claim 14 share a similar means to a different end. The only element the cited language of Mahy and claim 14 actually share is the use of a transformation module, a mathematical ubiquity. Therefore, the Applicant argues all the limitations of claim 14 are not taught or suggested by Mahy and that claim 14 is therefore not obvious.

The Applicant respectfully requests, in light of the above argument, that the rejection of claim 14, based on 35 U.S.C. § 103(a), be withdrawn.

Regarding claim 15, the Examiner asserts Mahy teaches said transformation module further comprises a transformation module for reducing said three-dimensional order to a one-dimensional order (citing col. 6, lines 44-47 of Mahy).

The Applicant respectfully disagrees with this assessment. Initially the Applicant refers the Examiner to the argument above regarding non-obvious dependent claims (*In re Fine*). The Examiner argued that Col. 6, lines 44-47 of Mahy teaches a technique for obtaining a color gamut via "union of the color gamut's of all the boundary n-ink processes of the m-ink process" (col. 6, lines 46-47 of Mahy). This citation is utterly devoid of any reference to, or bearing on a transformation module reducing a three-dimensional order to a one-dimensional order. Therefore, the Applicant argues all the limitations of claim 15 are not taught or suggested by Mahy and that claim 15 is not obvious.

The Applicant notes the Examiner's finding that claim 5 has been rejected for the same reason discussed in the rejection of claim 15. The Applicant respectfully requests, in light of the above argument, that the rejection of claims 15 and 5 based, on 35 U.S.C. § 103(a), be withdrawn.

Regarding claim 16, the Examiner argued that Mahy differs from claim 16 in that it does not teach reduction of a three-dimensional order to a one-dimensional order in response to determining which color among said plurality of colors has attained said gamut limit. However, the Examiner argued that Ito teaches a transformation module which reduces said three-dimensional to said one-dimensional order in response to determining which color among said plurality of colors has attained a gamut limit (citing col.5, lines 10-25 and col. 7, lines 47-55 of Ito).

The Applicant respectfully disagrees with this assessment. Initially, the Applicant refers the Examiner to the argument above regarding non-obvious dependent claims (*In re Fine*). Although the cited language does discuss reduction from three-dimensions to one-dimension, it lacks any teaching or suggestion about this reduction being in response to determining which color among said plurality of colors has attained a gamut limit. Thus Ito and Claim 16 share a similar means to a different end. The Applicant further notes it is not a limitation of claim 16 "to improve color reproducibility" as asserted and cited by the Examiner.

The Applicant argues therefore, all the elements of claim 16 are not taught by Ito in light of Mahy as required to demonstrate prima facie obviousness. The Applicant respectfully requests, in light of the above argument, that the rejection of claim 16, based on 35 U.S.C. § 103(a), be withdrawn.

With regard to claims 17 and 18, the Examiner notes Mahy does not teach an offline or inline sensor. However, the Examiner argues Holub discloses a system for distributing and controlling color reproduction in that he teaches a color sensor comprising an offline and inline sensor (citing Fig. 3a; col. 11, lines 66-67; col. 12, lines 1-19; Fig. 3B; col. 15, lines 42-67; and col. 16, lines 1-24 of Holub).

The Applicant respectfully disagrees with this assessment. Initially the Applicant refers the Examiner to the argument above regarding non-obvious dependent claims (*In re Fine*).

Firstly, the Applicant argues there is no motivation for the inclusion of the sensor described in Holub to Mahy as required to demonstrate prima facie obviousness. The Examiner admits Mahy does not teach a color sensor. This is specifically because the art in Mahy operates without the need for a sensor. That means the technique described in Mahy would not be improved by adding a sensor. Thus, one skilled in the art would have no motivation to incorporate the Holub sensor in Mahy.

In addition, there is not a reasonable expectation of success as required for a showing of prima facie obviousness. The addition of a sensor to Mahy would add nothing to the invention because that process already functions independent of a sensor. By contrast the use of the sensor as described in claims 17 and 18 is an essential component in the iterative process (another feature Mahy lacks) by which the invention operates. Simply put, adding a sensor to Mahy would not improve or change the functionality of that invention. Therefore, there is no reasonable expectation that the combination of the Holub sensor with the Mahy invention would successfully produce the present invention.

The Applicant notes the Examiner's finding that claims 6-8 have been rejected for the same reason discussed in the rejection of claims 17 and 18. The Applicant respectfully requests, in light of the above argument, that the rejection of claims 6-8, 17, and 18, based on 35 U.S.C. § 103(a), be withdrawn.

With regard to claim 19, the Examiner argues Mahy teaches that a system, as in claim 10, further comprise a color rendering device associated with the transformation module and wherein said transformation module is integrated with said image processing device.

Initially the Applicant refers the Examiner to the argument above regarding non-obvious dependent claims (*In re Fine*). The Applicant concedes Mahy does teach a system in which a color rendering device is present. However, the Applicant disagrees that the references cited teach or suggest integration of the transformation module with the image processing device. Col. 1, lines 16-40 of Mahy is included in the "Background of the Invention" section of the reference. As such, a printer (image processing device) is noted as a "typical device". The remainder of the cited section discusses definitions of "colorant space", "color space", and "colorant gamut"; none of which discuss integration of a transformation module with an image processing device. Col. 8, lines 34-45, contain the words "transformation by the printer module" but also do not make any mention of integration of such a module with an image processing device. The Applicant therefore argues the cited reference does not teach or suggest all the limitations of claim 19 for failure to discuss integration of the transformation module with the image processing device.

The Applicant respectfully requests, in light of the above argument, that the rejection of claim 19, based on 35 U.S.C. § 103(a), be withdrawn.

With Regard to claim 20, the Examiner notes that Mahy does not teach or suggest an iterative controller. However, the Examiner argues Ito does teach an iterative controller whose output is input to said color rendering device, such that the output of said iterative controller reflects a plurality of compensated color values requiring correction for rendering variations

thereof (citing Fig. 1 and 27, col.1 lines 60-67, col.2 lines1-9, and col. 18 25-67). The Examiner therefore claims it would have been obvious for one skilled in the art to modify Mahy to include an iterative controller.

The Applicant respectfully disagrees with this assessment. Initially the Applicant refers the Examiner to the argument above regarding non-obvious dependent claims (*In re Fine*). For purposes of argument, the Applicant will pretend the Examiner is correct in claiming Ito teaches such an iterative controller. The Applicant asserts there is no expectation of success in modifying Mahy to include an iterative controller. As evidence, consider col. 6, lines 21-27 of Mahy, which states that an objective of the Mahy invention is that iterative color gamut calculations should be avoided. That is, the purpose of Mahy is expressly to not use an iterative method. As such, there could be no reasonable expectation of success in modifying Mahy to include the iterative method of Ito. Therefore, the standard for Prima facie obviousness has not been met for claim 20.

The Applicant respectfully requests, in light of the above argument, that the rejection of claim 20, based on 35 U.S.C. § 103(a), be withdrawn.

With regard to claim 21, the Examiner argues Mahy teaches a color rendering device comprising a printer. The Applicant agrees with this assessment. However, the applicant refers the Examiner to the above argument regarding non-obvious dependent claims (*In re Fine*). The Applicant believes this argument applies equally to claim 22.

In light of this argument, the Applicant respectfully requests that the rejection of claims 21 and 22, based on 35 U.S.C. §103(a), be withdrawn.

Ito in view of Holub

Claim 9 is rejected under 35 U.S.C. §103(a) as being unpatentable over Ito et al. (U.S. Patent No. 6,437,792), hereinafter "Ito" in view of Holub (U.S. Patent No. 6,750,992).

Regarding claim 9, the Examiner argued that Ito teaches automatically providing a plurality of color values as input to an image processing device (citing Fig.1; col. 1, lines 60-67; and col.2, lines 1-9 of Ito), wherein said

device is under control of a three-dimensional order (Fig. 9; col. 4, lines 44-56; and col. 21, lines 43-51 of Ito), dynamically determining, using a color sensor, which color among a plurality of three colors cyan, magenta, and yellow, has attained a gamut limit (citing col. 12, lines 25-36 of Ito), transforming said three-dimensional order, in response to dynamically determining which of three color values has attained gamut limit (citing Fig. 9 and 33; col. 4, lines 44-56; and col. 21, lines 43-51 of Ito), and automatically reducing said three-dimensional order, thereby providing improved control for colors that are located beyond the color gamut (citing col. 21, lines 43-51 of Ito). The Examiner also argued that Holub teaches a color sensor (citing Fig.3; col. 11, lines 66-67; and col. 12, lines 1-56 of Holub). The Examiner concluded it would have been obvious to one skilled in the art, to modify Ito to include the color sensor taught by Holub.

The Applicant respectfully disagrees with this assessment. The Applicant, notes as argued above, Ito does not teach or suggest automatic input or transforming the three-dimensional order in response to dynamically determining which color value among said plurality of three color values has attained the gamut limit. In the interest of brevity, these arguments will not be rehashed. The Applicant therefore asserts not all the limitations of claim 9 are taught or suggested by the references cited as required to establish prima facie obviousness.

The Applicant therefore, respectfully requests that the rejection of claim 9, based on 35 U.S.C. §103(a), be withdrawn.

III. Correspondence Information

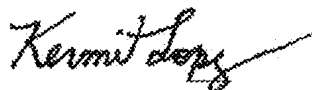
The Examiner advises the Applicant in the correspondence information that, to be complete, this reply must include an election of invention to be examined even though the requirement is traversed. The Applicant respectfully requests clarification on this matter as no information is provided as to which claims may be in violation and in light of the fact that applicant has made no effort to "traverse" the requirement since this is the first Official Action.

IV. Conclusion

In view of the foregoing discussion, the Applicant has responded to each and every rejection of the Official Action. The Applicant has clarified the structural distinctions of the present invention via the amendments and discussion provided herein. Applicant respectfully requests the withdrawal of the rejections under 35 U.S.C. §103 based on the preceding remarks. Reconsideration and allowance of Applicant's application is also respectfully solicited.

Should there be any outstanding matters that need to be resolved, the Examiner is respectfully requested to contact the undersigned representative to conduct an interview in an effort to expedite prosecution in connection with the present application.

Respectfully submitted,



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Kermit Lopez
Attorney for Applicants
Registration No. 41,953
ORTIZ & LOPEZ, PLLC
P.O. Box 4484
Albuquerque, NM 87196-4484